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Express Mailing Label No. EV 825 901 943 US

PATENT APPLICATION
Docket No: 14321.67

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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|----------------------|---|------------|
| In re application of | |) |
| | |) |
| | Nobuhiro Nunoya et al. |) |
| | |) |
| Serial No.: | 10/527,355 |) Art Unit |
| | |) 2811 |
| Filed: | March 7, 2005 |) |
| | |) |
| Confirmation No.: | 4938 |) |
| | |) |
| For: | OPTICAL SEMICONDUCTOR DEVICE AND OPTICAL SEMICONDUCTOR INTEGRATED CIRCUIT |) |

CERTIFICATE OF EXPRESS MAIL UNDER 37 C.F.R. § 1.10

I hereby certify that the following documents are being deposited with the United States Postal Service as Express Mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450, on the 9th day of May 2006.

- Petition for Republication of Patent Application (2 pages)
- Copy of first page of published application (1 page)
- Postcard

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Dana L. Tangren".

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PETITION FOR REPUBLICATION OF PATENT APPLICATION
PUBLICATION PURSUANT TO 37 CFR 1.221(b)

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

The above-identified patent application published as US Patent Application Publication No. US 2006/0050752 A1 on March 9, 2006. Attached is a copy of the first page of the publication. Upon review of the publication it was determined that the Patent Office had misspelled the title of the application. As such, pursuant to 37 CFR 1.221(b) applicant respectfully requests that the above-identified patent application be republished with the title under (54) on the front page of the publication being amended as follows:

OPTICAL SEMICONDUCTOR DEVICE AND OPTICAL
SEMICONDUCTOR ~~IN-TEGRATED~~ INTEGRATED CIRCUIT

A marked copy of the published application showing the requested change is attached.

Applicant submits that the error in the publication was of no fault of the applicant and that the present petition is being filed within two (2) months from the date of publication. Accordingly, all of the conditions for the request for republication under 37 CFR 1.221(b) have been satisfied and republication is respectfully requested.

Dated this 9th day of May 2006.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Dana L. Tangren", with a long horizontal flourish extending to the right.

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(57) ABSTRACT

An optical semiconductor device and optical semiconductor integrated circuit are provided by combining, on a semiconductor substrate, materials having different refractive indices and different temperature dependence of the refractive indices. In particular, it becomes possible to control the temperature dependence of the oscillation wavelength with a propagating region having a material and/or structure whose temperature dependence of the refractive index is different from that of a gain region of the semiconductor laser. In addition, they can be configured to have a plurality of interfaces formed along the waveguide direction of the optical waveguide so that the light reflected off the first interface is weakened by the light reflected from the remaining interfaces. Also, they can be configured with the interfaces inclined to the propagating direction so that the waveguide loss due to the reflection and refraction between the optical waveguides whose refractive indices differ from each other can be reduced.

